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Application forms P.1, P.2 provisional specification and drawings of South African Patent Application 2003/7484 as originally filed in the Republic of South Africa on 26 September 2003 in the name of ADRIAAN VAN EEDEN for an invention entitled: "BODILY TRANSPORTING AID."

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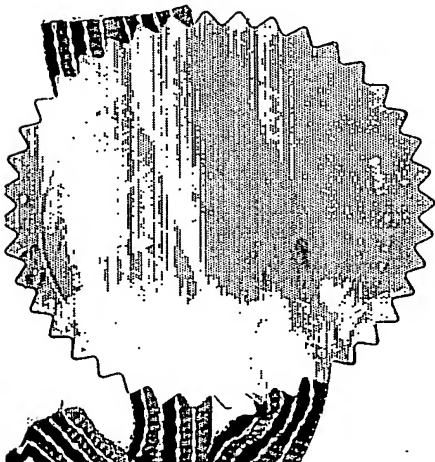
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Title of invention			
54 BODILY TRANSPORTING AID			
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PATENTS ACT, 1978

APPLICATION FOR A PATENT AND ACKNOWLEDGEMENT OF RECEIPT

(Section 30(1)-Regulation 22)

(i)

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Applicant's

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54 Title of Invention BODILY TRANSPORTING AID

(v)

The applicant claims priority as set out on the accompanying P2.

(vi)

This application is a patent of addition to Patent Application No.

21 01.

(vii)

This application is a fresh application in terms of section 37 and based on Application No.

21 01.

(viii)

This application is accompanied by:

- X 1. A single copy of a provisional and two copies of the complete specification of 11 pages.
- X 2. Drawings of 3 pages.
- 3. Publication particulars and abstract (form P8 in duplicate)
- 4. A copy of Figure of the drawings (if any) for the abstract
- 5. An assignment of invention.
- 6. Certified priority document(s) (state number)
- 7. Translation of priority document(s)
- 8. An assignment of priority rights.
- 9. A copy of the form P2 and the specification of S.A. Patent application No. 21 01.
- X 10. A declaration and power of attorney on form P3.
- 11. Request for ante daring on form P4.
- 12. Request for classification on form P9
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Signature of applicant(s) or agent

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FORM P6

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PROVISIONAL SPECIFICATION
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Title of Invention

54

BODILY TRANSPORTING AID

(1) TITLE OF THE INVENTION

BODILY TRANSPORTING AID

(2) FIELD OF THE INVENTION

This invention relates to a transporting aid amongst others employable for the independent mobile transportation between locations of a person requiring aided movement and to a transporting aid set. Although not so limited the invention finds useful application in the field of convertibility as regards a walking aid and a wheel chair.

(4) SUMMARY OF THE INVENTION

According to the invention there is provided a bodily transporting aid amongst others employable for the independent mobile transportation between locations of a person requiring aided movement comprising

a multi directionally propellable wheeled carrier facility that is constituted to be without substantial effort if at all convertible into at least two of, though depending on the mode of propulsion of the aid,

a walk support providing condition into which conversion from the carrier facility requires only minor adjustment if at all, and in which condition the carrier facility is constituted to result in a user being positioned within a semi enclosing frame, as suitably integrated into the remainder of the facility, extending conventional walker fashion relative to such user,

a wheel chair providing condition in response to the appropriate displacement of a seating arrangement relative to if not requiring its fitting to the facility while in the appropriate case involving the suitable re-adjustment of the carrier facility, and

in the case of the carrier facility being fitted with powerable propulsion means enabling its powered propulsion via a drive wheel arrangement, as in such case thus also employable for propelling the aid when in its wheel chair providing condition, a standing transporter providing condition that involves the appropriate removable positioning of a standing base relative to the carrier facility once the seating arrangement has been appropriately displaced and which transporter providing condition also involves the semi enclosing frame.

The drive wheel arrangement, as thus fitted to the carrier facility, may preferably be in the form of laterally spaced independently to and fro drivable drive wheels that are suitably positioned relative to the carrier facility to also enable rotation of the aid, at least when in its wheel chair or standing transporter providing condition, to whichever condition the carrier facility is convertible if not to both, about a substantially centrally extending upright axis.

The carrier facility may in an embodiment be formed with a drive wheel carrying user accommodating part that holds the seat arrangement when the aid in its wheel chair providing condition while serving at least partly for mounting the standing base when in its standing transporter providing condition, to whichever condition the carrier facility is convertible if not to both, while further presenting the semi enclosing frame used for performing its walker providing function, which user accommodating part is displaceably mounted to a wheeled base frame, also forming part of the carrier facility, while being biased by biasing means relative to the base frame to a condition of drive wheel disengagement with a rolling base onto which the aid is situated once in use, the drive wheels thus being urged to come into rolling engagement with such rolling base, enabling the powerable propulsion of the aid when in its appropriate condition, once the user accommodating part is exposed to a downwardly exerted force, as thus exerted once the aid, when in its wheel chair providing condition or in its standing transporter providing condition to whichever the carrier facility is convertible if not to both, is occupied.

The user accommodating part may in an embodiment engage releasably with the wheeled base frame enabling the collapsing of the wheeled carrier facility.

The user accommodating part may engage with the wheeled base frame via laterally extending drive wheel carrying arms that each passes snugly displaceably along base frame

carried sleeves and to the bottom ends of which arms the drive wheels are respectively mounted.

The drive wheels may conveniently be lockable against rotation for serving a braking effect against free rolling of the aid when in its wheel chair or standing transporter providing conditions to whichever the carrier facility is convertible if not to both, the drive wheels also being employable to control the free rolling motion of the aid once in its walk support providing condition in response to a user when so requiring urging the drive wheels to come into braking contact with a rolling base in response to the manual exertion of a downward force on the user accommodating part via the semi enclosing frame.

The transporting aid may be multi directionally propellable via castor wheels at least one of each being positioned at the outer corners of the wheeled base frame as correspondingly formed, the drive wheels thus being situated intermediate front and rear castor wheels found along each side of the wheeled base frame.

The carrier facility may preferably be arranged to cause its wheel chair providing condition, on the one hand, and its walk support or its standing transporter providing conditions, to whichever condition the carrier facility is convertible if not to both, to face in opposite directions.

In a preferred embodiment the semi-enclosing frame may be provided by a transverse gripping handle providing frame member extending into upper end arms integrally incorporated in the user accommodating part, the gripping handle providing frame member also being employable for securing a backrest portion of a seat on conversion of the aid to its wheel chair providing condition.

The carrier facility may be constituted to be supplemented by a seat base carrier in response to the fitting of a seat base support grid to the user accommodating part and to which a seat base forming part of the seat is securable, removal of the support grid and in the appropriate case further re-adjustment of the carrier facility thus enabling access of a user to the semi enclosing frame for using the aid as a walk supporter or as a standing transporter to whichever condition the carrier facility is convertible if not to both.

The standing base, as involved in converting the aid to the standing transporter, when so constituted, may conveniently be formed to extend at least partly intermediate the base frame while at least engaging with supports forming part of the user accommodating part to cause its downward urging into drive wheel to rolling base engagement once the aid, as converted for use as a standing transporter, is occupied.

In a preferred embodiment the aid may comprise the carrier facility incorporating the powerable propulsive drive wheel arrangement, the seating arrangement and the standing base thus rendering it in convertible between its walk support providing condition, its wheel chair providing condition and its standing transporter providing condition.

Further according to the invention there is provided a bodily transporting aid set formable into a transporting aid amongst others employable for the independent mobile transportation between locations of a person requiring aided movement comprising

a multi directionally propellable wheeled carrier facility that is convertible into a walk support providing condition via the introduction of only minor adjustment to the facility, if at all, and in which condition the carrier facility is constituted to result in a user being positioned within a semi enclosing frame; as suitably integrated into the remainder of the facility, extending conventional walker fashion relative to such user, and at least one of

a seating arrangement that is releasably securable to the carrier facility in converting it into a wheel chair providing condition while in the appropriate case involving the suitable re-adjustment of the carrier facility, and

in the case of the carrier facility being fitted with powerable propulsion means enabling its powered propulsion via a drive wheel arrangement, a standing base that is releasable securable to the carrier facility in converting it into a standing transporter providing condition, also in the appropriate case requiring re-adjustment of the carrier facility.

The drive wheel arrangement, as thus fitted to the carrier facility of the set, may be in the form of laterally spaced independently to and fro drivable drive wheels that are suitably positioned relative to the carrier facility to also enable rotation of an aid as formed from the set, at least when formed into its wheel chair or standing transporter providing condition, to whichever condition the carrier facility is convertible if not to both, about a substantially centrally extending upright axis.

The carrier facility of the set may be preferably be formed with a drive wheel carrying user accommodating part, that presents the semi enclosing frame used for performing its walker providing function and that is adapted to hold the seat arrangement for conversion of an aid as formed from the set to its wheel chair providing condition, and for at least partly mounting the standing base for conversion of such aid to its standing transporter providing condition, to whichever condition such aid is convertible if not to both, which user accommodating part is displaceably mounted to a wheeled base frame, also forming part of the carrier facility, that is biased by biasing means relative to the base frame to a condition of drive wheel

disengagement with a rolling base onto which such aid is situated once in use, the drive wheels thus being urged to come into rolling engagement with such rolling base, enabling the powerable propulsion of such aid when in its appropriate condition, once the user accommodating part is exposed to a downwardly exerted force, as thus exerted once such aid, when in its wheel chair providing condition or in its standing transporter providing condition to whichever the carrier facility is convertible if not to both, is occupied.

The user accommodating part of the wheeled carrier facility may in an embodiment engage releasably with the wheeled base frame enabling the collapsing of the wheeled carrier facility.

The user accommodating part may preferably engage with the wheeled base frame via laterally extending drive wheel carrying arms that each passes snugly displaceably along base frame carried sleeves and to the bottom ends of which arms the drive wheels are respectively mounted.

The drive wheels may be lockable against rotation for serving a braking effect against free rolling of an aid as formed from the set once converted to its wheel chair or standing transporter providing conditions to whichever condition the carrier facility is convertible if not to both, the drive wheels also being employable to control the free rolling motion of the support facility once in its walk support providing condition in response to the user of such aid when so requiring urging the drive wheels to come into braking contact with a rolling base in response to the manual exertion of a downward force on the user accommodating part via at least the gripping handle providing member.

The wheeled carrier facility of the set may conveniently be multi directionally propellable via castor wheels at least one of each being positioned at the outer corners of the wheeled base frame as correspondingly formed, the drive wheels thus being situated intermediate front and rear castor wheels found along each side of the wheeled base frame.

The carrier facility may be arranged to cause the wheel chair providing condition, on the one hand, of an aid as formed from the set, and its walk support or its standing transporter providing conditions, to whichever condition the carrier facility is convertible if not to both, on the other hand, as also formed from the set, to face in opposite directions.

In a preferred embodiment the semi enclosing frame may be provided by a transverse gripping handle providing frame member extending into upper end arms integrally incorporated in the user accommodating part, the gripping handle providing frame member also being employable for securing a backrest portion of a seat on conversion of an aid as formed from the set to its wheel chair providing condition.

In a preferred embodiment the transporting aid set may incorporate a seat base carrier to which a seat base is securable with the user accommodating part being arranged to be fitted with the seat base carrier and seat base into forming an aid as formed from the set into the wheel chair while in the appropriate case requiring further re-adjustment of the carrier facility.

The standing base, as involved in converting an aid as formed from the set to a standing transporter, when so constituted, may conveniently be formed to extend at least partly intermediate the base frame of the carrier facility of the set once operatively fitted, while at least engaging with supports forming part of its user accommodating part to cause its downward urging into drive wheel to rolling base engagement once such aid, as converted for use as a standing transporter, is occupied.

In a preferred embodiment the set may be constituted from a carrier facility incorporating a powerable propulsive drive wheel arrangement, a seating arrangement and a standing base enabling the conversion of an aid as formed from the set into a walk support condition, a wheel chair providing condition and a standing transporter providing condition.

(5) BRIEF DESCRIPTION OF THE DRAWING

The invention is now described, by way of example, with reference to the accompanying drawings. In the drawings

Figure 1 shows an aid according to the invention convertible between a walk support providing condition, a wheel chair providing condition and a standing transporter providing condition in a drive wheel non-engaging side elevational walk support providing condition,

Figure 2 shows the aid in its drive wheel engaging side elevational walk support providing condition,

Figure 3 shows the aid in plan view walk in its support providing condition,

Figure 4 shows the aid in direction of arrow A in figure 1,

Figure 5 shows the aid in the direction of arrow B in figure 1,

Figure 6 shows the aid in its side elevational wheel chair providing condition,

Figure 7 shows the aid in plan view in its wheel chair providing condition,

Figure 8 shows the aid in the direction of arrow C in figure 6,

Figure 9 shows the aid in the direction of arrow D in figure 6,

Figure 10 shown the aid in its side elevational standing transporter providing condition,

Figure 11 shows the aid in plan view in its standing transporter providing condition,

Figure 12 shows the aid in the direction of arrow E in figure 10, and

Figure 13 shows the aid in the direction of arrow F in figure 10.

(6) DETAILED DESCRIPTION OF THE DRAWINGS

Referring to the drawings a transporting aid employable as walk supporter, wheel chair and standing transporter in response to appropriate conversion or re-arrangement is generally indicated by reference numeral 10.

The aid 10 comprises a multi directionally propellable wheeled carrier facility in the form of a carrier frame 12 that is fitted with a drive wheel arrangement in the form of laterally situated drive wheels 14 that are drivable by powerable propulsion means in the form of battery driven motors 16 powered from batteries held by battery holders 18. The frame 12 is constituted from a drive wheel carrying user accommodating part in the form of an upper frame part 20 displaceably mounted to a wheeled base frame 22 fitted at its outer corners with castors 24. The upper frame part 20 is so displaceably mounted by way of drive wheel carrying arms 26

that fit displaceably along sleeves 28 while being biased in the direction of arrow 30 relative to the base frame 22 by way of a spring (not shown) covered by spring covers 32. The wheels 14 are secured to the lower ends of the arms 26 respectively and are urged out of rolling base engaging contact by the springs except when the frame part 20 is exposed to a downward exerted force, as discussed below.

The drive wheels 14 are situated laterally to the central axis 34 of the aid 10 in a plane that extends through the axis 34 and generally centrally through the aid 10. The drive wheels 14 are also independently drivable in both directions by means of their motors 16. Running of the motors 16 are controlled by means of a conventional multi directional controller 36 mounted on the upper frame part 20. Being so drivable in opposite directions enables the aid 10 to be turned about the axis 34 having the result that when the aid is converted to a wheel chair performing condition or a standing transporter performing condition, both as discussed in more detail below, the aid 10 can turn on the spot where it stands by driving the wheels 14 in their opposite directions.

Although not shown when the drive wheels 14 are inherently non-suspensive they can be mounted on sprung pivotal arms rendering the upper frame part 20 suspensive. The drive wheels 14 are mounted to only rotate when their drive motors 16 are powered. When not so powered the wheels 14 are restrained against rotation thus serving a rolling base engaging braking function when urged into abutment with such base.

The aid 10 is thus re-arrangeable into a walk supporter or walker 38, as discussed further on with reference to figures 1 to 5, and convertible into a wheel chair 40 as discussed further on with reference to figure 6 to 9 and a standing transporter 42 as discussed further on with reference to figure 10 to 13.

Referring to figures 1 to 5 the upper frame part 20 of the aid 10 presents a semi enclosing frame 44 defined by a transverse gripping handle providing frame member in the form of a gripping handle 46 extending into user accommodating part laterally situated semi loop formation contributing arms 48 integrally incorporated into the upper frame part 20 within which frame 44 a user is situated once using the aid 10 as walker. When the aid 10 has been used as a wheel chair 40 or standing transporter 42 prior to conversion to a walker 38 the wheeled base frame 22 extends in substantially rectangular closed loop when viewed in plan. To enable comfortable access to the frame 44 obstructions to the entrance from the rear of the aid 10 as regards the direction of its forward motion when used as a walker 38 must thus be removed. To this end the cross member 50 forming part of the base frame 22 is thus

removably secured to the remainder of the base frame 22. Conversion from its wheel chair or standing transporter providing conditions into its walker providing condition simply involves the removal of the cross member 50 naturally in addition to seat or standing base removal.

Once so converted the aid 10 is in its conventional walker providing form movement of which during use takes place in generally the direction of arrow 52.

When used as walker 38 the aid 10 is only used to assist the walker user in the conventional walking action resulting in only a small downward urging being exerted on the upper frame part 20 in response to the manual gripping of the semi enclosing frame 44. The biasing springs biasing the upper frame part 20 away from the base frame 22 are selected to maintain their biasing action except when exposed to a substantial downward force that is at any rate larger than the force so exerted on the upper frame part 20 when the aid 10 is conventionally used as walker. In consequence and as shown in figure 1 the drive wheels 14 are maintained out of rolling base engaging contact by the springs when the aid 10 is so conventionally walker fashion used with aid motion being promoted via the castors 24. Should a user however require the exertion of a braking effect on the walker 38 during use and referring to figure 2, an increased downward force is simply exerted on the upper frame part 20 via the semi enclosing frame to the extent of overcoming the bias of the springs thus causing the drive wheels 14 to come into rolling base abutment. As the wheels 14 while not driven by their drive motors 16, are restrained from rotation, their urging against the rolling base once the aid 10 is walker fashion used has the effect of braking the progress of the walker 38 thus aiding in controlling its motion.

When in its walker providing condition the aid 10 is easily collapsible to promote its ease of transportation. To this end the gripping handle 46 engages releasably with the arms 48. Each of the drive wheel carrying arms 26 is constituted from an upper section 26.1 and a lower section 26.2. The upper sections 26.1, as forming part of the upper frame part 20, engage bayonet fashion with the lower sections 26.2, as forming part of the base frame 22. The upper sections 26.1 include the springs as covered by the covers 32. They thus engage releasably with the bottom sections 26.2 just below the springs. The upper and lower sections 26.1, 26.2 are maintained locked to one another by the locking action of the handle 46. To collapse the aid 10 the handle 46 is simply removed freeing the upper and lower frame sections 26.1 and 26.2 to be bayonet coupling fashion uncoupled having the effect of separating the upper frame part 20 (though with the handle removed) from the base frame 22.

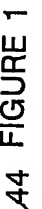
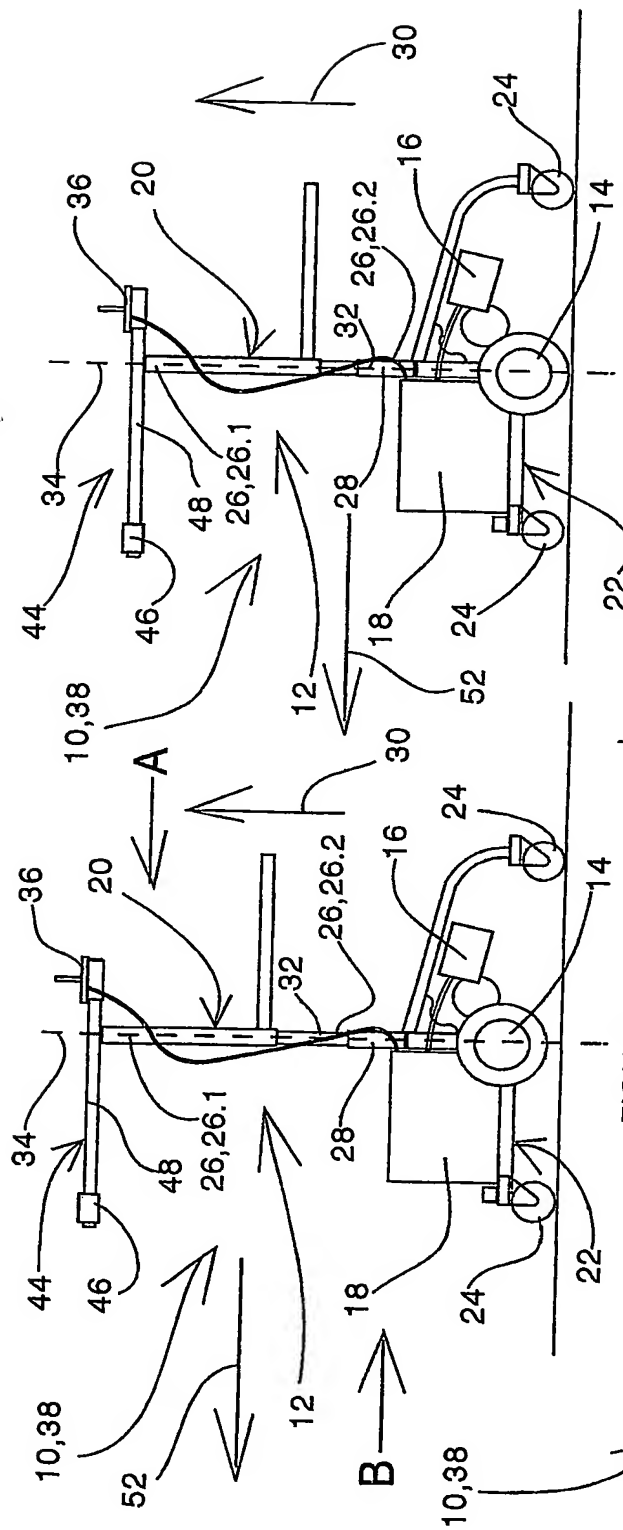
Conversion of the aid 10 from its walker providing condition to its wheel chair providing condition involves the re-engagement of the cross member 50 into the base frame 22. In referring to figures 6 to 9 conversion further involves the securing of a seat base support grid 54 to the upper frame part 20. The grid 54 is constituted from opposing end bars 56 of which the one bar 56.1 is slidably engaged via end sockets 58 with seat forming arms 60 forming integrally forming part of the upper frame part 20 while the opposite bar 56.2 is suspended from the semi loop formation contributing arms 48 via slings 62. The grid 54 is formed by the securing of grid connectors 64 to extend between the opposing bars 56. As further support one or more support straps 66 are slung to extend between the opposing bars 56. A seat base 68 is thus secured to the grid 54. A seat backrest 70 is furthermore secured to the gripping handle 46. The seat base 68 and backrest 70 together define the seat of 72 the wheel chair 40. The direction of forward travelling of the aid 10 when converted to the wheel chair 40 is in the direction of arrow 74 and thus opposite to that of the aid 10 when converted to the walker 38. Owing to the drive wheels 14 being drivable in both directions the wheel chair 40 can naturally be driven in both directions. The biasing effect of the springs are selected to result in the upper frame part 20 being urged downward once the seat 72 is occupied resulting in the drive wheels 14 coming wheel chair driving contact with a rolling base.

Conversion of the aid 10 from its walker providing condition to its standing transporter providing condition is achieved by simply fitting a standing base 76 to the base frame 22, naturally once the seat 72 is removed when conversion is from the wheel chair providing condition. To ensure that the effect of drive wheel to rolling base engagement can be achieved in this case the lower ends of the arms 26 are formed with inwardly projecting lugs 78 facing into the intermediate zone of the base frame 22. Operative fitting of the standing base 76 thus also involves its edgewise location onto the lugs 78 in addition to resting on either the front or rear cross arms of the frame 22. Once a user is thus positioned on the standing base 76 the downward force of the user's weight causes the downward urging of the upper frame part 20 resulting in drive wheel to rolling base engagement for suitable riding to aid 10.

As the aid 10 is constituted of several removably mountable parts the invention also relates to a set constituted from the carrier frame 12, as separable into an upper frame part 20 and a base 22, the chair 72 as incorporating its various parts, and the standing base 76.

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Patent Agent for Applicant





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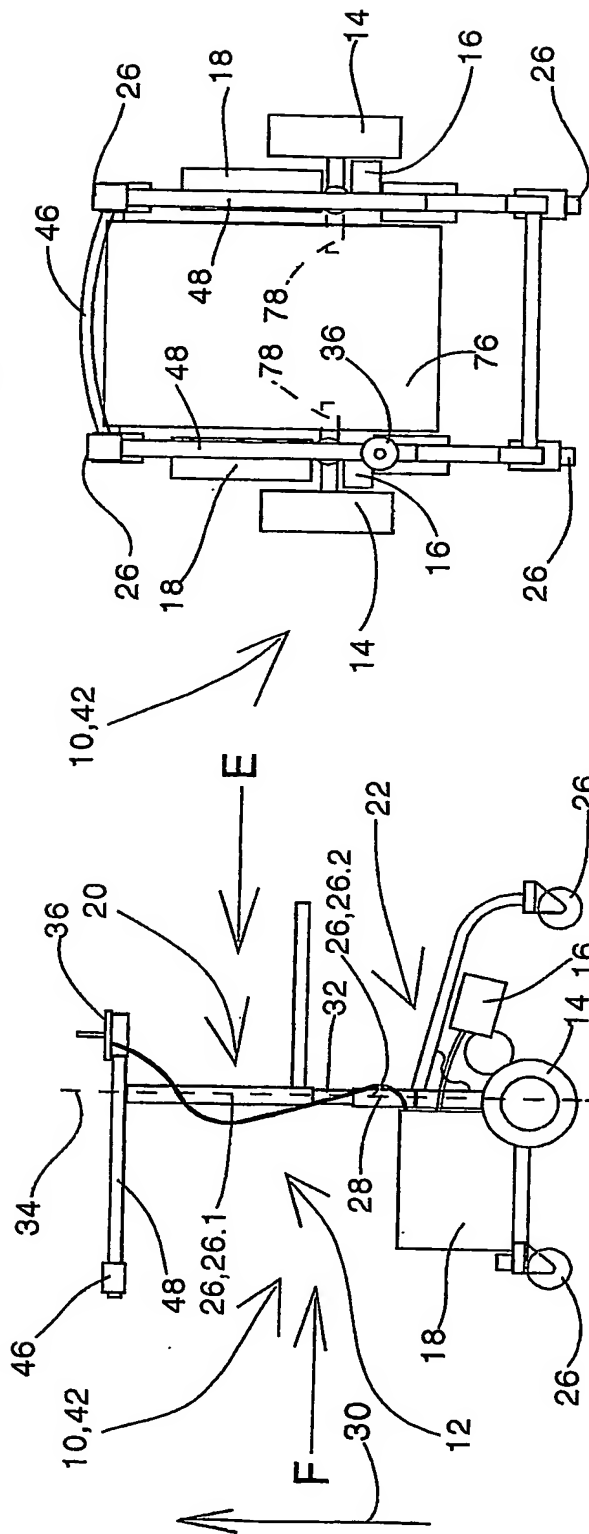


FIGURE 10

FIGURE 11

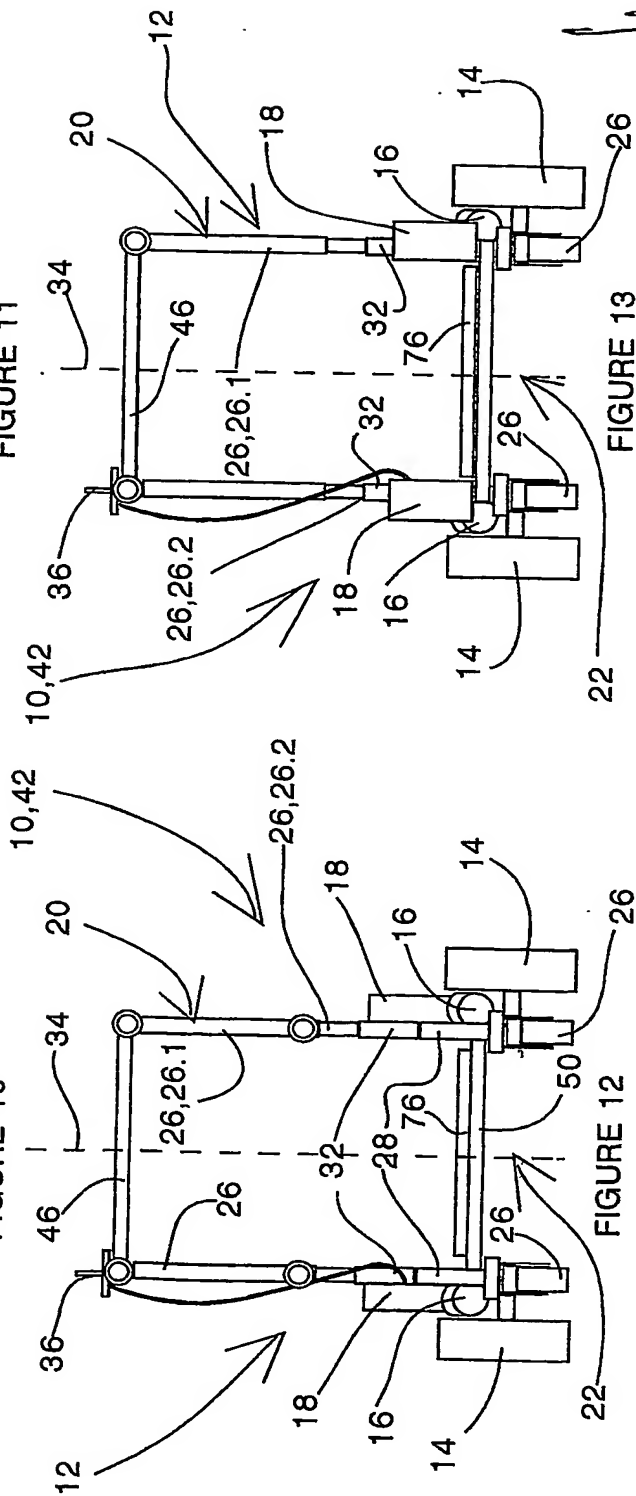


FIGURE 12

FIGURE 13

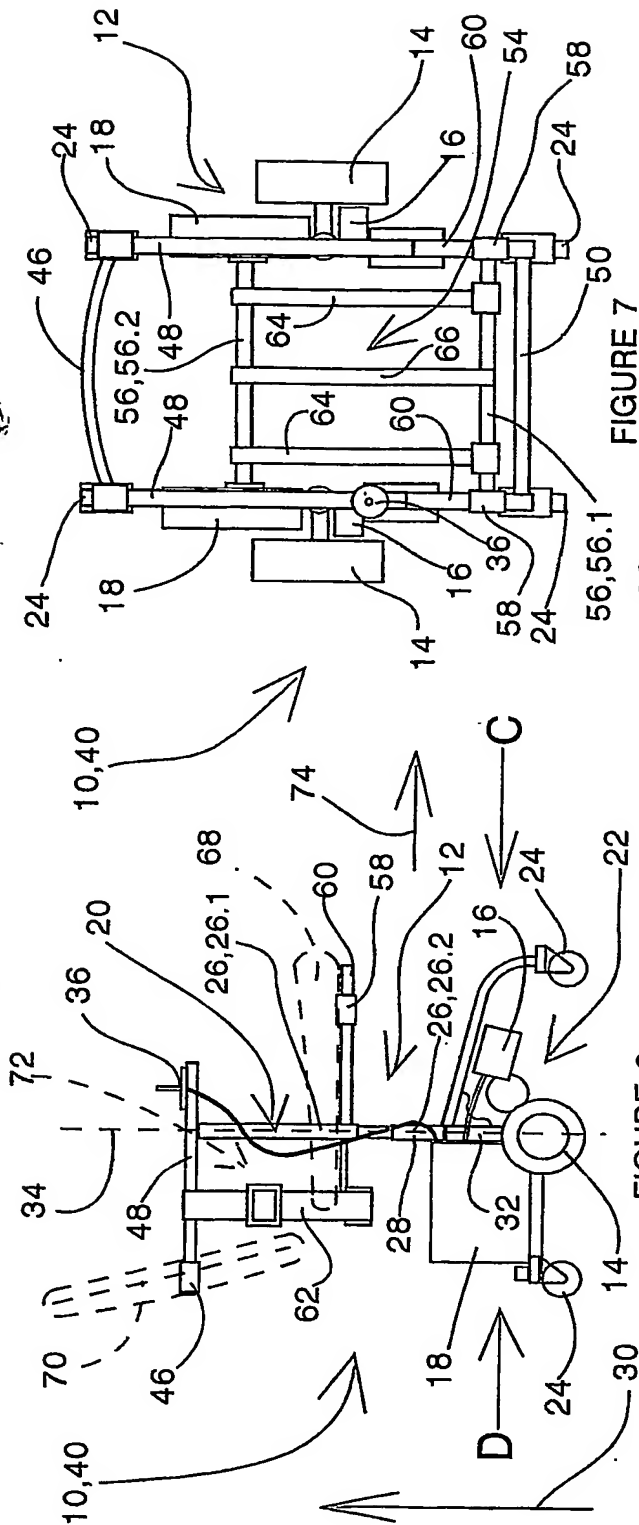


FIGURE 6

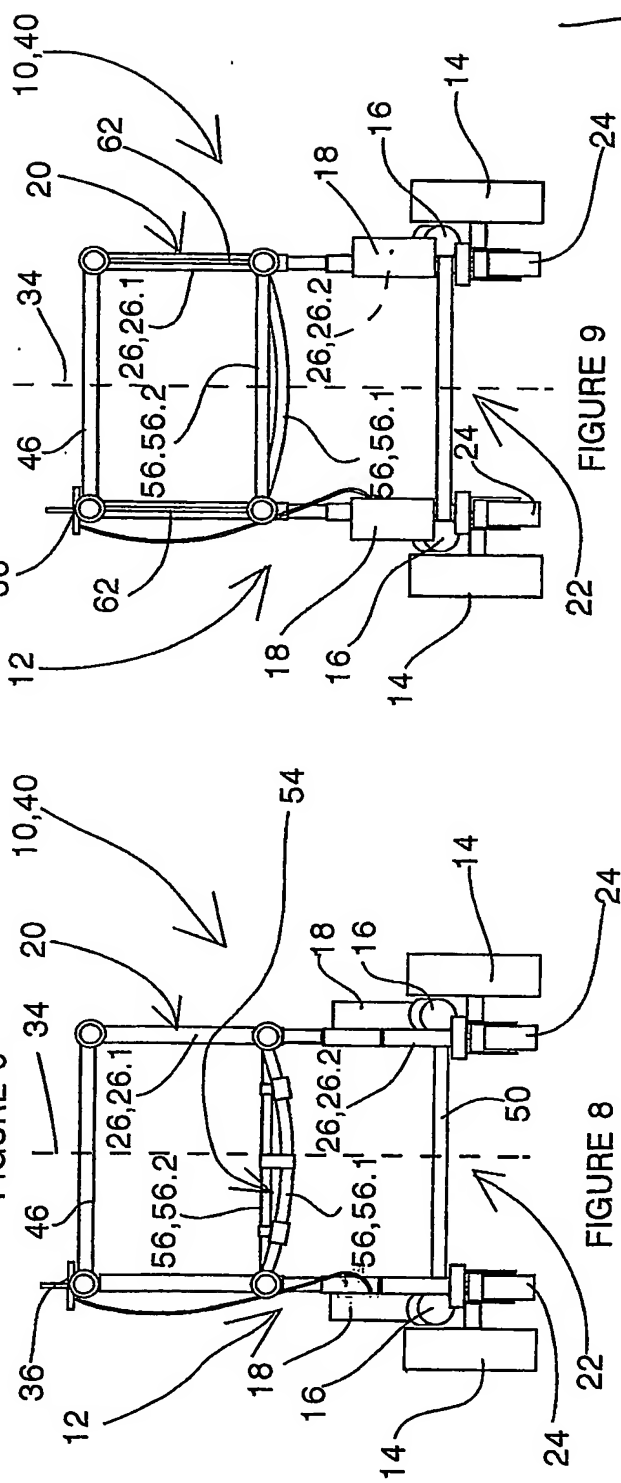


FIGURE 7

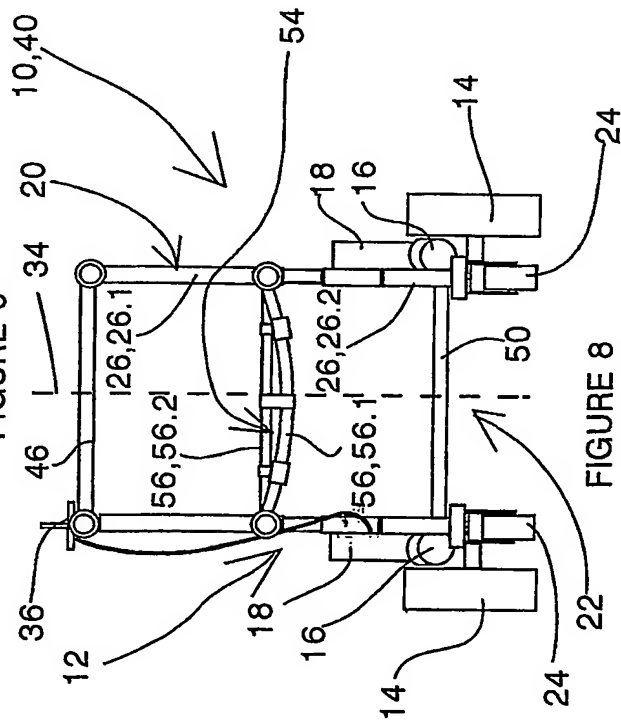


FIGURE 8

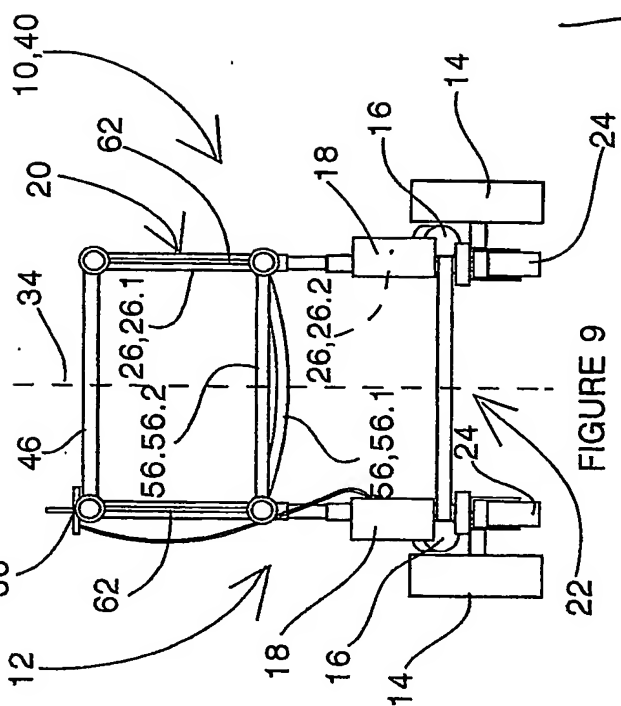


FIGURE 9

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